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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,668	01/11/2001	Fred L. Starkey	1981/637	9539

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EXAMINER

GOINS, DAVETTA WOODS

ART UNIT	PAPER NUMBER
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2632

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/758,668

Applicant(s)

STARKEY, FRED L.

Examiner

Davetta W. Goins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-23 is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 11-20, are rejected under 35 U.S.C. 102(b) as being anticipated by Geschke et al. (US Pat. 5,661,651).

In reference to claims 1-5, 11, 12, 13, 16-20, Geschke discloses the claimed plurality of tire monitors associated with wheels of a vehicle, each wheel including a tire having a characteristic frequency response, each tire monitor including a transmitter configured to transmit tire data at a transmission frequency chosen in relation to the characteristic frequency response of the tire; and a receiver configured to receive the tire data, which is met by a wireless vehicle parameter monitoring system 10 including a sensor with transmitter circuit 20 attached to each wheel of the vehicle; the transmitter circuits 20₀-20_n transmit an RF signal having a carrier frequency falling within at least “one predefined”(previously determined characteristic) frequency range centered at or about nominal frequencies f_0 - f_n (previously identified frequencies) (col. 3, lines 8-53). The sensor and transmitter 20 are used to monitor the pressure inside a vehicle's tire. A bandpass filter 42 is used having a center frequency equal to the nominal frequency f_{NOM} transmitted from at least one of parameter sensor and transmitter circuits 20₀-20_n. The bandpass filter 42 preferably has bandwidth of $2\Delta f$ corresponding to the range of frequencies (previously identified

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passband of frequencies) that VCO 22 may output when a parameter level, such as the tire pressure, is low (col. 4, lines 23-40).

In reference to claim 6, Geschke discloses the claimed tire having a previously determined characteristic frequency response including one identified attenuation band and one identified passband, the characteristic frequency response related to the structure of the tire, the transmission frequency chosen to be in one passband, which is met by A bandpass filter 42 is used having a center frequency equal to the nominal frequency f_{NOM} transmitted from at least one of parameter sensor and transmitter circuits 20₀-20_n. The bandpass filter 42 preferably has bandwidth of $2\Delta f$ corresponding to the range of frequencies (previously identified passband of frequencies) that VCO 22 may output when a parameter level, such as the tire pressure, is low (col. 4, lines 23-40).

In reference to claim 14, Geschke discloses the claimed demodulation of the radio carrier signal to recover the tire data, which is met by the resulting mixed signal is provided to a bandpass filter that passes a demodulated signal through to microcontroller 144 (col. 7, ;lines 53-67).

In reference to claim 15, Geschke discloses the claimed method of transmitting the radio carrier signal at a predetermined transmission power, which is met by each wheel of the vehicle; the transmitter circuits 20₀-20_n transmit an RF signal having a carrier frequency falling within at least "one predefined"(previously determined characteristic) frequency range centered at or about nominal frequencies f_0 - f_n (previously identified frequencies) (col. 3, lines 8-53).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geschke et al. in view of Uhl et al. (US Pat. 6,169,480 B1).

In reference to claims 7, 8, although Geschke does not disclose the claimed metallic strands of a predetermined length defining in part the characteristic frequency of the tire, he does disclose that each wheel of the vehicle includes a sensor and transmitter 20 used to monitor the pressure inside a vehicle's tire (col. 3, lines 8-53). Uhl discloses a tire pressure measuring device for each wheel of the vehicle that transmits a frequency of the pressure of the wheel in relation to the wheel 2 length 7a, 8a, preferably over a length corresponding to one quarter-wave length of the transmitter frequency of arrangement 3, of their metallic outer conductor (col. 3, lines 3-26). Since Geschke discloses a sensor for each tire of the vehicle, it would have been obvious to one of ordinary skill in the art to provide metallic strands of a specific frequency as a means for securing the sensor to each wheel and taking into account the characteristic of the metallic strands when receiving the transmitted signals, as disclosed by Uhl, to ensure that a correct pressure reading will be determined.

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In reference to claims 9, 10, although Geschke does not disclose the claimed transmitter configured to transmit frequencies greater than 600 MHz or a range from 800 MHz to 1000 MHz, he does disclose transmitting a frequency from the tire in which the signal is between 1 MHz and 3 MHz (col. 7, lines 53-67; col. 8, lines 1-9). Since Geschke discloses a sensor for each wheel transmitting various frequencies that are received by a receiving unit, it would have been obvious to one of ordinary skill in the art to use any frequency wanted to prevent interference from any other transmitted signals within the vehicle.

Allowable Subject Matter

5. Claims 21-23 are allowed.

The following is an examiner's statement of reasons for allowance: Geschke discloses a wireless vehicle monitoring system which detects the tire pressure of each wheel and transmits a frequency signal that falls within a predefined frequency range. A bandpass filter 42 is used having a center frequency equal to the nominal frequency f_{NOM} transmitted from at least one of parameter sensor and transmitter circuits 20₀-20_n. The bandpass filter 42 preferably has bandwidth of $2\Delta f$ corresponding to the range of frequencies that VCO 22 may output when a parameter level, such as the tire pressure, is low. However, Geschke nor any prior art of record disclose the claimed tire data sensor producing data indicative of a tire condition and a circuit coupled with the data sensor to transmit tire data at one or more transmission frequencies chosen to be within a "previously identified" passband of frequencies of a "previously determined" characteristic frequency response to "electromagnetic" energy imparted on the tire.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davetta W. Goins whose telephone number is 703-306-2761.

The examiner can normally be reached on Mon-Fri with every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 703-308-6730. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-7666.



D.W.G.
March 6, 2003

Davetta W. Goins
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